

Attorney Docket No. MP0404.I

PATENT

**WHAT IS CLAIMED IS:**

1. A method for verifying a design of a circuit, comprising:  
providing a model of the design;  
providing a first property for the design, wherein the first property describes a first  
5 behavior;  
checking the model using the first property and an environment of the design starting  
at a reset state until an example of the first behavior occurs;  
providing a second property for the design, wherein the second property describes a  
second behavior; and  
10 checking the model using the second property and an environment of the design  
starting at a state when the example of the first behavior occurs.

2. The method of claim 1, wherein providing the first property comprises:  
providing a statement in a specification language stating that the first behavior does  
15 not occur.

3. The method of claim 2, wherein the environment of the design comprises one  
or more environment variables, and wherein checking the model using the first property  
comprises:  
20 determining a set of values for the environment variables that causes the model of the  
design to show an example of the first behavior.

4. The method of claim 1, further comprising:  
providing a state of the model of the design when the example of the first behavior  
25 occurs.

5. The method of claim 1, further comprising:  
providing the environment of the design starting at the reset state.

30 6. The method of claim 1, further comprising:

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providing the environment of the design starting at a state when the example of the first behavior occurs.

7. The method of claim 6:

5 wherein the environment of the design comprises one or more environment variables;  
wherein the model of the design comprises one or more model variables; and  
wherein providing the environment of the design starting at the state when the  
example of the first behavior occurs comprises at least one of the group consisting of:  
describing the state when the example of the first behavior occurs; and  
10 providing the values of the environment variables and the model variables in  
each clock cycle preceding the example when the first behavior occurs.

8. A computer program for verifying a design of a circuit, comprising:

providing a model of the design;  
15 providing a first property for the design, wherein the first property describes a first  
behavior;  
checking the model using the first property and an environment of the design starting  
at a reset state until an example of the first behavior occurs;  
providing a second property for the design, wherein the second property describes a  
20 second behavior; and  
checking the model using the second property and an environment of the design  
starting at a state when the example of the first behavior occurs.

9. The computer program of claim 8, wherein providing the first property  
25 comprises:

providing a statement in a specification language stating that the first behavior does  
not occur.

10. The computer program of claim 9, wherein the environment of the design  
30 comprises one or more environment variables, and wherein checking the model using the  
first property comprises:

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determining a set of values for the environment variables that causes the model of the design to show an example of the first behavior.

5 11. The computer program of claim 8, further comprising:  
providing a state of the model of the design when the example of the first behavior occurs.

10 12. The computer program of claim 8, further comprising:  
providing the environment of the design starting at the reset state.

13. The computer program of claim 8, further comprising:  
providing the environment of the design starting at a state when the example of the first behavior occurs.

15 14. The computer program of claim 13:  
wherein the environment of the design comprises one or more environment variables;  
wherein the model of the design comprises one or more model variables; and  
wherein providing the environment of the design at the state when the example of the first behavior occurs comprises at least one of the group consisting of:  
20 describing the state when the example of the first behavior occurs; and  
providing the values of the environment variables and the model variables in each clock cycle preceding the example when the first behaviour occurs.

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